

IN THE CLAIMS

Please amend the claims as indicated below. A redlined version of the amended paragraphs is attached to this response as Appendix A.

Please replace the claims identified below with the following amended claims:

5. (Once amended) An encryption system, comprising:
a random number selector subsystem for generating random numbers from data bits generated from random received signal characteristics that are extracted from the received signal using existing wireless phone hardware; and
an encryptor for encrypting a signal using said random numbers.

Please add the following new claims:

9. An apparatus for generating random data bits in wireless communications device, comprising:

means for processing a received signal; and

means for extracting said random data bits from said processed receive signal.

10. The apparatus of claim 9 wherein said means for processing a received signal comprises an automatic gain control circuit.

11. The apparatus of claim 9 wherein said means for processing a received signal comprises a DC Offset Correction Loop.

12. The method of Claim 9 wherein said means for processing a received signal comprises a Time Tracking Loop.

13. A wireless device for generating a continuous pool of mathematically random data for wireless communications encryption, comprising:

- a receive demodulator for receiving an analog signal;
- an analog to digital converter for converting the received analog signal to a received digital signal;
- a digital signal processing circuit for generating random data bits from the received digital signal, and
- an encryptor for encrypting a transmitted signal.

14. The wireless device of claim 13 wherein the digital signal processing circuit comprises an automatic gain controller.

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15. The wireless device of claim 13 wherein the digital signal processing circuit comprises a DC Offset Correction Loop.

16. The wireless device of claim 13 wherein the digital signal processing circuit comprises a Time Tracking Loop.

17. The wireless device of claim 13 wherein the wireless device is a wireless phone.

18. A method of encrypting wireless communications from a continuous pool of mathematically random data, comprising:

- receiving an analog signal;
- converting the received analog signal to a received digital signal;
- processing the received digital signal;
- generating a continuous pool of mathematically random data bits from the processed received digital signal; and

encrypting a transmitted signal using the continuous pool of mathematically random data bits.

19. The method of claim 18 wherein the generating a continuous pool of mathematically random data bits comprises extracting random data bits from an automatic gain controller.

20. The method of claim 18 wherein the generating a continuous pool of mathematically random data bits comprises extracting random data bits from a DC Offset Correction Loop. *mean DC level. because fluctuation*

a² 21. The method of claim 18 wherein the generating a continuous pool of mathematically random data bits comprises extracting random data bits from a Time Tracking Loop. *normalize the phase*

22. The method of claim 19 wherein two random data bits are extracted from the automatic gain controller for every frame of received data.

23. The method of claim 20 wherein one random data bit is extracted from the DC Offset Correction Loop for every frame of received data.

24. The method of claim 21 wherein one random data bit is extracted from the Time Tracking Loop for every frame of received data.

Sub B6 25. A method for generating a continuous pool of mathematically random data for wireless communications encryption, comprising:

generating random data bits from an automatic gain controller and adding the bits to the random data pool;

generating random data bits from a DC Offset Correction Loop and adding the bits to the random data pool; and

generating random data bits from a Time Tracking Loop and adding the bits to the random data pool.

26. The method of claim 25 wherein the generating random data bits from an automatic gain controller comprises generating two random data bits from the automatic gain controller for each frame of received data.

27. The method of claim 25 wherein the generating random data bits from a DC Offset Correction Loop comprises generating one random data bit from the DC Offset Correction Loop for each frame of received data.

28. The method of claim 25 wherein the generating random data bits from a Time Tracking Loop comprises generating one random data bit from the Time Tracking Loop for each frame of received data.

29. A wireless device for generating, from a received signal, a continuous pool of mathematically random data for wireless communications encryption, comprising:
an Automatic Gain Controller for generating random data bits to be added to the random data pool;
a DC Offset Correction Loop for generating random data bits to be added to the random data pool; and
a Time Tracking Loop for generating random data bits to be added to the random data pool.

30. The wireless device of claim 29 wherein the automatic gain controller generates two random data bits for each frame of received data.

31. The wireless device of claim 29 wherein the DC Offset Correction Loop generates one random data bit for each frame of received data.

a² 32. The wireless device of claim 29 wherein the Time Tracking Loop generates one random data bit for each frame of received data.

33. The wireless device of claim 29 wherein the wireless device is a wireless phone.
